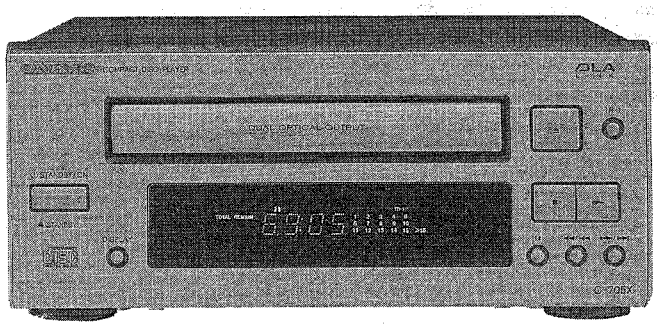
C-705X

Ref. No. 3629
081999

ONKYO® SERVICE MANUAL

COMPACT DISC PLAYER
MODEL C-705X



Silver model

UDT	120V AC, 60Hz
UP,UPT	230V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

Signal readout system:	Optical non-contact
Reading rotation:	About 500 -200 r.p.m. (constant linear velocity)
Linear velocity:	1.2-1.4m/s
Error correction system:	Cross Interleave Reed-Solomon code
D/A converter:	1 BIT DAC
Sampling frequency:	352.8kHz (8 times oversampling)
Number of channels:	2 (Stereo)
Frequency response:	5Hz-20kHz
Harmonic distortion:	0.005% (at 1kHz)
Dynamic range:	96 dB
Signal to noise ratio:	90 dB
Channel separation:	85 dB(at 1kHz)
Wow and Flutter:	Below threshold of measurability
Output level:	2 volts r.m.s.
Power consumption:	8W: 230V model 9W:120V model
Dimensions:	205(W)×91(H)×280(D)mm:230V model 205(W)×91(H)×275(D)mm:120V model
Weight:	2.2 kg

C-705X

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SERVICE PROCEDURES

1. Replacing the fuse

This symbol located near the fuses indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utlise est a rapide. Pour une protection permanente, n'utiliser que fusibles de meme type. Ce darnier est la qu le present symbol est appse.

'CIRCUIT NO.	PART NO.	DESCRIPTION
F901	252075	2.5A-SE-EAK
	230V model only	

2. Removement of tray

Remove the top cover.
Turn the locked screw to the clockwise to release the lock of gear.(Refer fig.1)
Pull out the tray ass'y.
Remove the stopper.(Refer fig.2)
Press the tray stopper to the arrow mark direction and remove the tray ass'y.

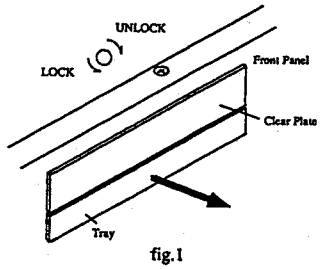


fig.1

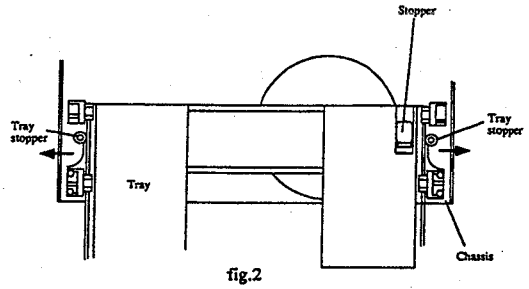


fig.2

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

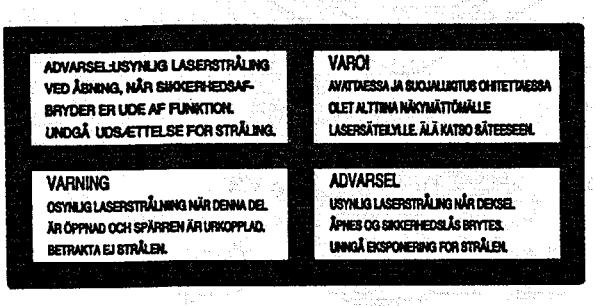
WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMMISION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

Laser Diode Properties
- Material: GaAS/GaAlAs
- Wavelength: 760~780nm
- Emission Duration: continuous
- Laser Output: max. 0.5mW*

* This output is the value measured at a distance about 1.8mm from the objective lens surface on the Optical Pick-up Block.

LASER WARNING LABEL

The labels shown below are affixed.


ADVARSEL:USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDER ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVARSEL
USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.

ADVARSEL

Denna maekning er anbragt på apparatets højre side og indikerer, at apparatet arbejder med laserstråler af klasse 1, hvilket betyder, at der anvendes laserstråler af svageste klasse, og at man ikke på apparatets yderside kan blive udsat for utilladelig kraftig stråling.

APPARATET BØ/R KUN ABNES AF FAGFOLK MED SE RLIGT KENDSKAB TIL APPARATER MED LASERSTRÅLER!

Indvendigt i apparatet er anbragt den her gengivne advarselsmérkning, som advarer imod at foretage sådnne indgreb i apparatet, at man kan komme til at udsaette sig for laserstråling.

VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSA KÄYTTOOHJEESSA MAINTULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMALLE LASERSÄTEILYLLE.

CAUTION ON REPLACEMENT OF OPTICAL PICK UP

The laser diode in the optical pickup block is so sensitive to static electricity,surge current and etc, that the components are liable to be broken down or its reliability remarkably deteriorated.

During repair,carefulley take the following precautions. (The following precautions are included in the service parts.)

PRECAUTIONS

1.Ground for the work-desk.
Place a conductive sheet such as a sheet of copper (with inpedance lower than 10MΩ) on the work-desk and place the set on the conductive sheet so that the chassis.

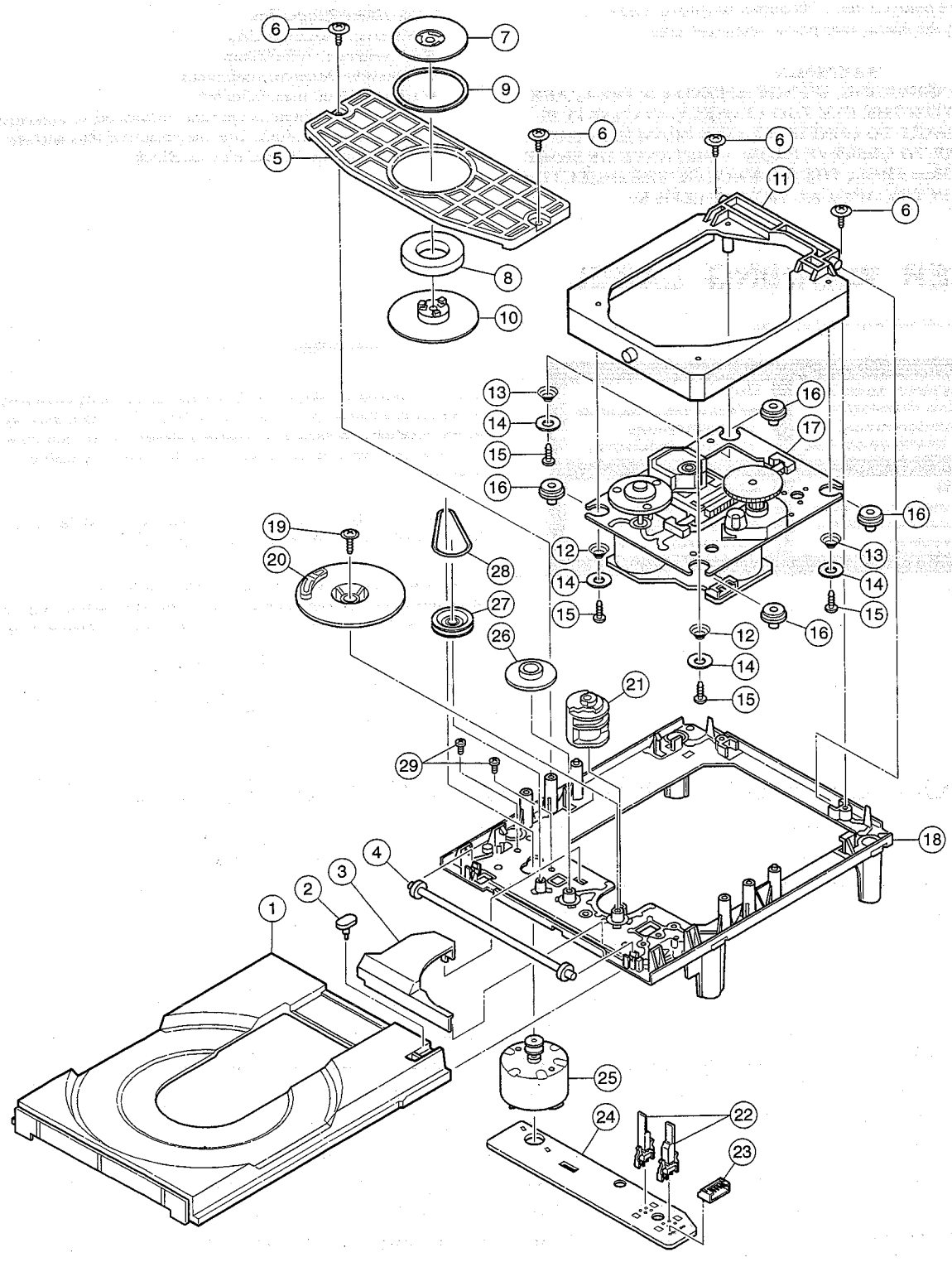
2.Grounding for the test equipment and tools.
Test equipments and toolings should be grounded in order that their ground level is the same the ground of the power source.

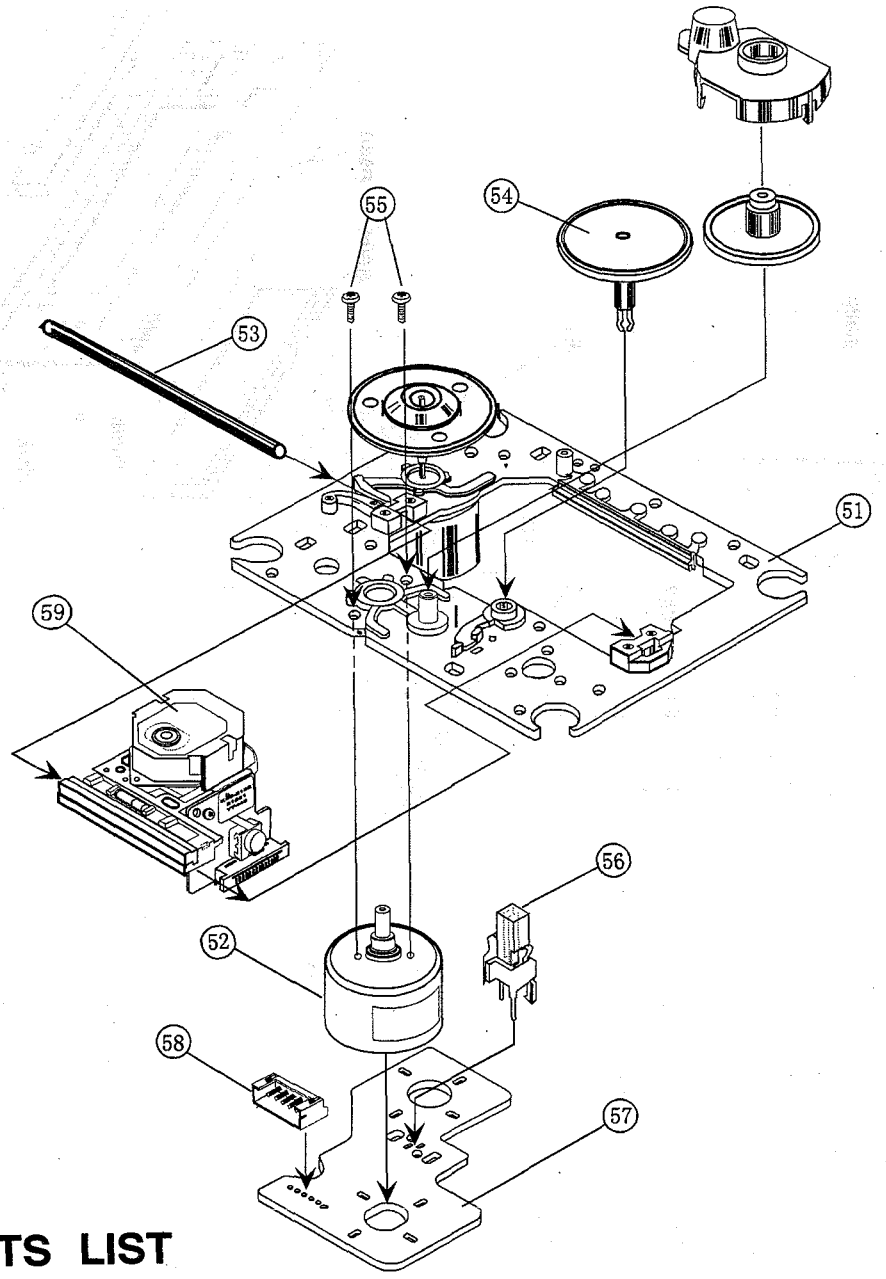
3.Grounding for the human body.
Be sure to put on a wrist-strap for grounding whose other end is grounded.
Be particularly careful when the workers wear synthetic fiber clothes, or air is dry.

4.Select a soldering iron that permits no leakage and have the tip of the iron well-grounded.

5.Do not check the laser diode terminals with the probe of a circuit tester or oscilloscope.

MECHANISM EXPLODED VIEW

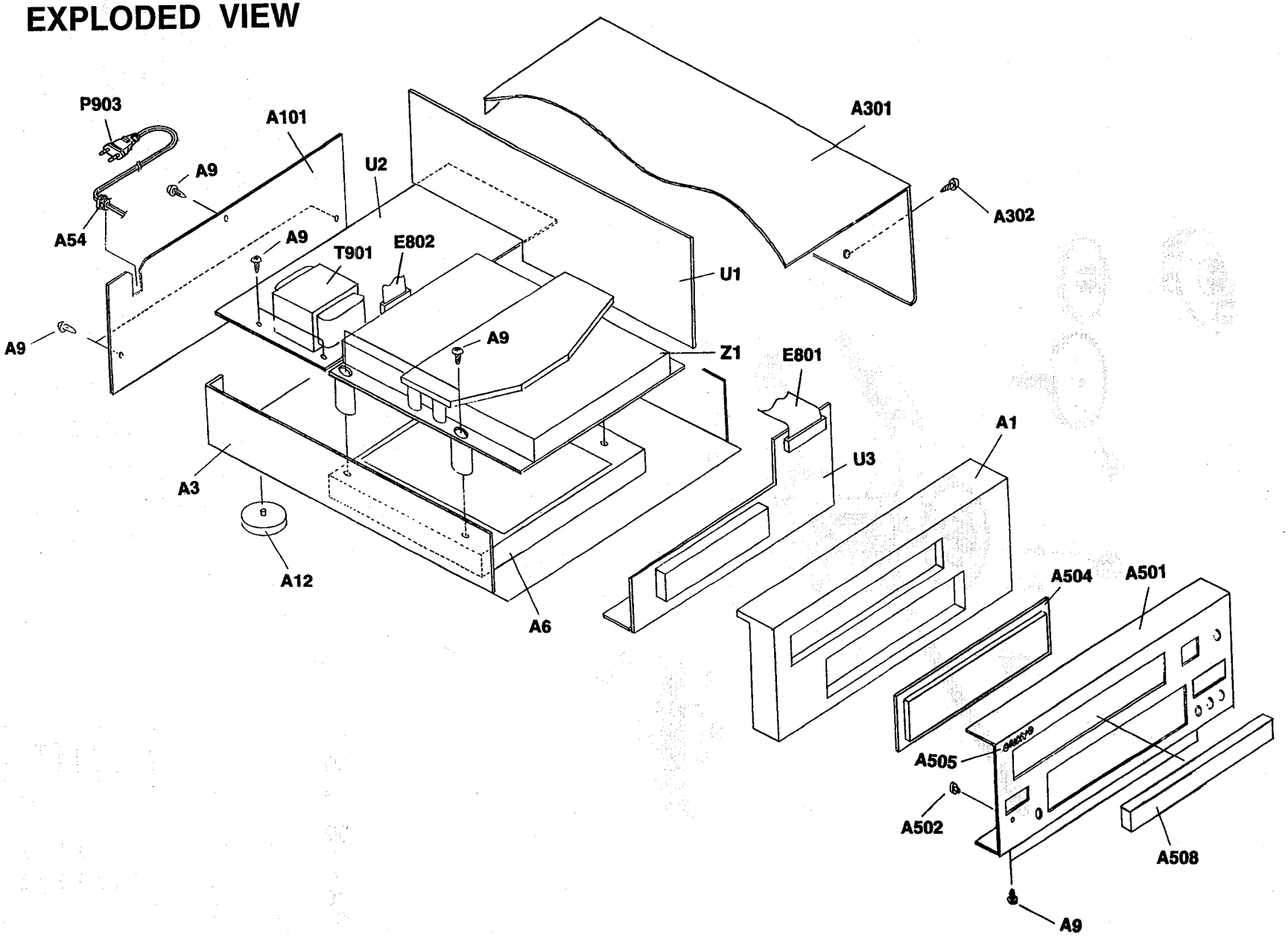




PARTS LIST

Ref.No.	Part No.	Description
1	2646-290-01	Tray
2		Stopper
3	2625-544-01	Gear cover
4	2625-535-01	Tray gear
5	2625-546-01	Chucking plate
6		PTPWH2.6×7,Screw
7	2625-537-01	Chucking yoke
8	1452-493-21	Magnet
9	2625-541-02	Damper
10	2646-291-01	Chucking pulley
11	2646-288-01	Sub chassis
12	2627-236-01	Coil spring (front)
13	2627-235-01	Coil spring (back)
14	2646-289-01	Washer
15		P2.6×10, Screw
16	2627-234-01	Insulator
17		KSM-213CCM, Pickup drive unit
18	2625-552-06	Main chassis
19	3319-501-51	PTPWH2.6×16, Screw
20	2625-547-01	Drive Gear
21	2625-545-04	Control cam
22	1692-667-11	Leaf switch
23	1564-721-11	Socket
24	1640-523-11	Loading PC board
25	X2625-117-1	Loading motor ass'y
26	2625-274-02	Midway gear
27	2625-536-02	Loading pulley
28	3653-387-00	LM belt
29		B2.6×2.5, Screw
51	X2625-877-1	Motor chassis ass'y
52	X2625-769-1	Motor gear ass'y
53	2626-908-01	Sled shaft
54	2626-907-01	Gear
55		P2×3, Screw
56	1572-085-11	Leaf switch
57	1639-678-12	Motor PC board
58	1564-722-11	Socket
59	8848-483-05	KSS-213C, Pickup

EXPLODED VIEW



EXPLODED VIEW – PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
A1	27111122	Front bracket
A3	27100376A	Chassis
A6	27191019	Holder M
A9	838130088	3TTB+8B,Self tapping screw
A12	27175323	Leg
A54	27300750	⚠ Bushing, cord
A101	27122615	Rear Panel <DT>
	27122605	Rear Panel <P, PT>
A301	28184760	Top cover
A302	838930088	3TTB+8B(UN), Self tapping screw
A501	27212111	Front panel
A502	28198895	Facet
A504	28191801C	Clear plate
A505	28135247	Badge
A508	28148411	Door
E801	2047251012	NCFC7-251012, Flexible flat cable
E802	2042161012	NCFC2-161012, Flexible flat cable
F901	252075	⚠ 2.5A-SE-EAK Fuse <P,PT>
P102	2009990500	NSAS-10P0654, Socket
P103	2002391215	NSAS-12P0655, Socket
P903	253277MIL	⚠ AS-UC-2#18, Power supply cord <DT>
	253193HIT	⚠ AS-CEE, Power supply cord <P,PT>
T901	2301295	⚠ NPT-1251D, Power transformer <DT>
	2301133	⚠ NPT-1251P, Power transformer <PT>
U1	1H403541-1A	NAAR-6641-1A,Main circuit pc board ass'y <DT>
	1H403541-1C	NAAR-6641-1C,Main circuit pc board ass'y <P,PT>
U2	1H403542-1A	NCPS-6642-1A,Power supply pc board ass'y <DT>
	1H403542-1C	NCPS-6642-1C,Power supply pc board ass'y <P,PT>
U3	1H403543-1A	NCDIS-6643-1A,Display circuit pc board ass'y <DT>
	1H403543-1C	NCDIS-6643-1C,Display circuit pc board ass'y <P,PT>
Z1	24800018A	NCD-170S, CD mechanism ass'y
Z2	29362028	Label

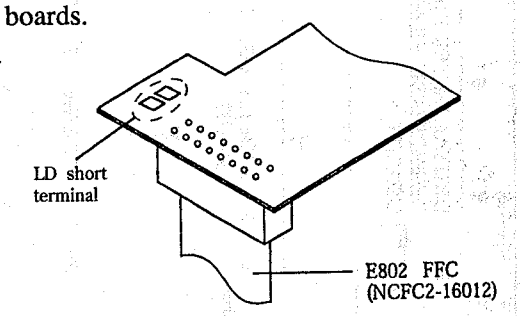
NOTE : THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

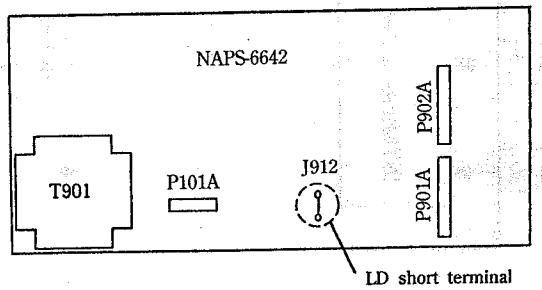
NOTE : <DT>:120V model only
<P,PT>:230V model only

REPLACEMENT OF OPTICAL PICK-UP

The laser diode in the optical pickup block is so sensitive to static electricity, surge current and etc. that the components are liable to be broken down or its reliability remarkably deteriorated.
During repair, carefully take the following precautions.

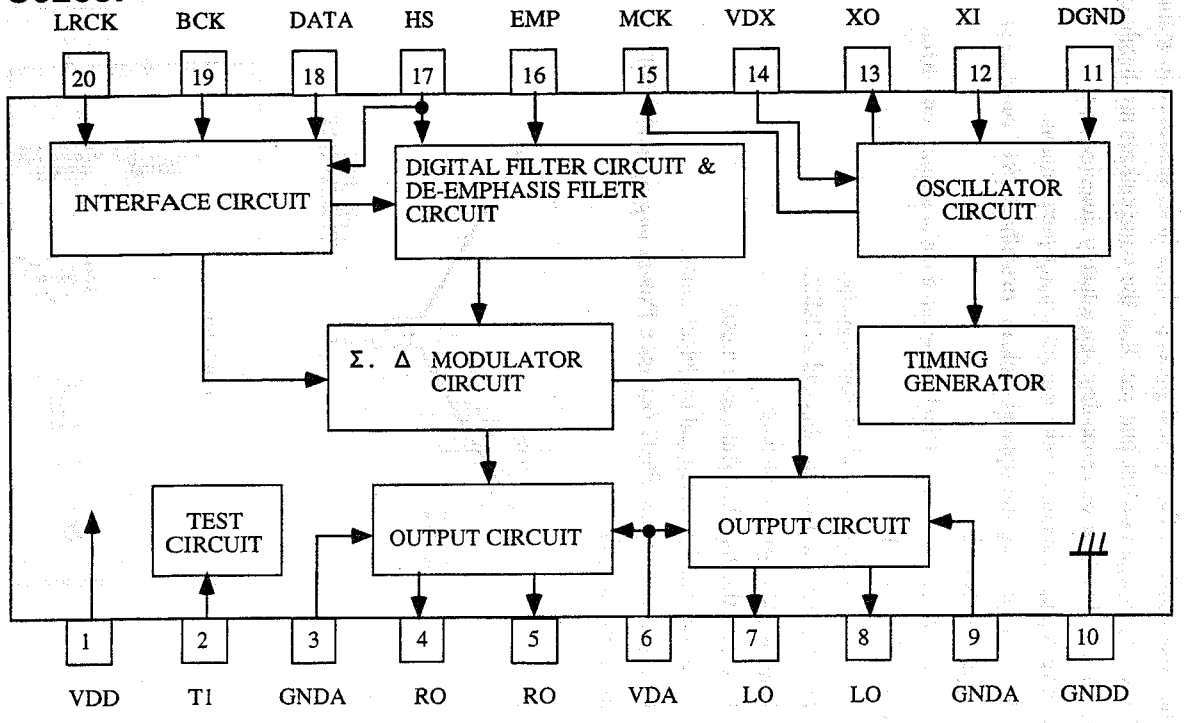
1. When replacing the optical pickup, first short J912 on Power supply PC board.
2. Disconnect the socket P901 between Power supply and Main circuit PC boards.
3. Solder the LD terminal on Mechanism.
4. Disconnect the flexible flat cable E802.
5. Replace the optical pickup.
6. Connect the flexible flat cable E802.
7. Unsolder the LD terminal on Mechanism.
8. Connect the socket P901 between Power supply and Main circuit PC boards.
9. Cut J912





IC BLOCK DIAGRAMS AND DESCRIPTIONS

TC9268P



Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	VDD	-	Power supply pin for digital section	11	GNDX	-	Ground pin for oscillator section
2	T1	I	Test pin. Connect to the ground.	12	XI	I	Connection pins for crystal oscillator
3	GNDA	-	Ground pin of analog section for right channel	13	XO	O	
4	RO	O	Data output pin of right channel	14	VDX	-	Power supply pin for crystal section
5	RO	O	Data inverted output pin of right channel	15	MCK	O	System clock output pin
6	VDA	-	Power supply pin for analog section	16	EMP	I	De-emphasis filter control pin
7	LO	O	Data inverted output pin of left channel	17	HS	I	Speed select pin
8	LO	O	Data output pin of left channel	18	DATA	I	Data input pin
9	GNDA	-	Ground pin of analog section for left channel	19	BCK	I	Bit clock input pin
10	GNDD	-	Ground pin for digital section	20	LRCK	I	LR clock input pin

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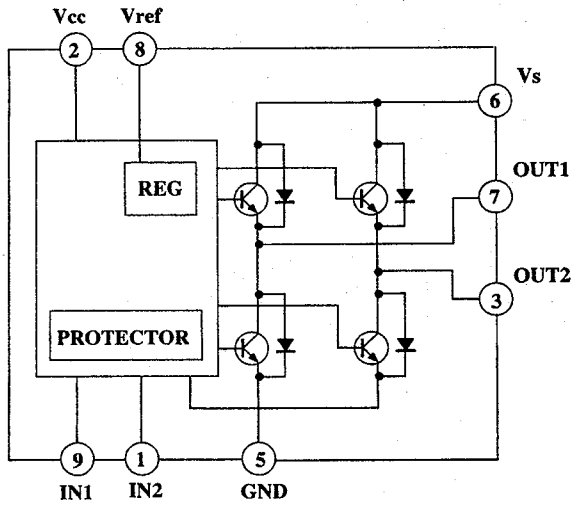

INPUT		OUTPUT		
IN1	IN2	OUT1	OUT2	MODE
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

CCW:Counter clockwise direction
CW:Clockwise direction

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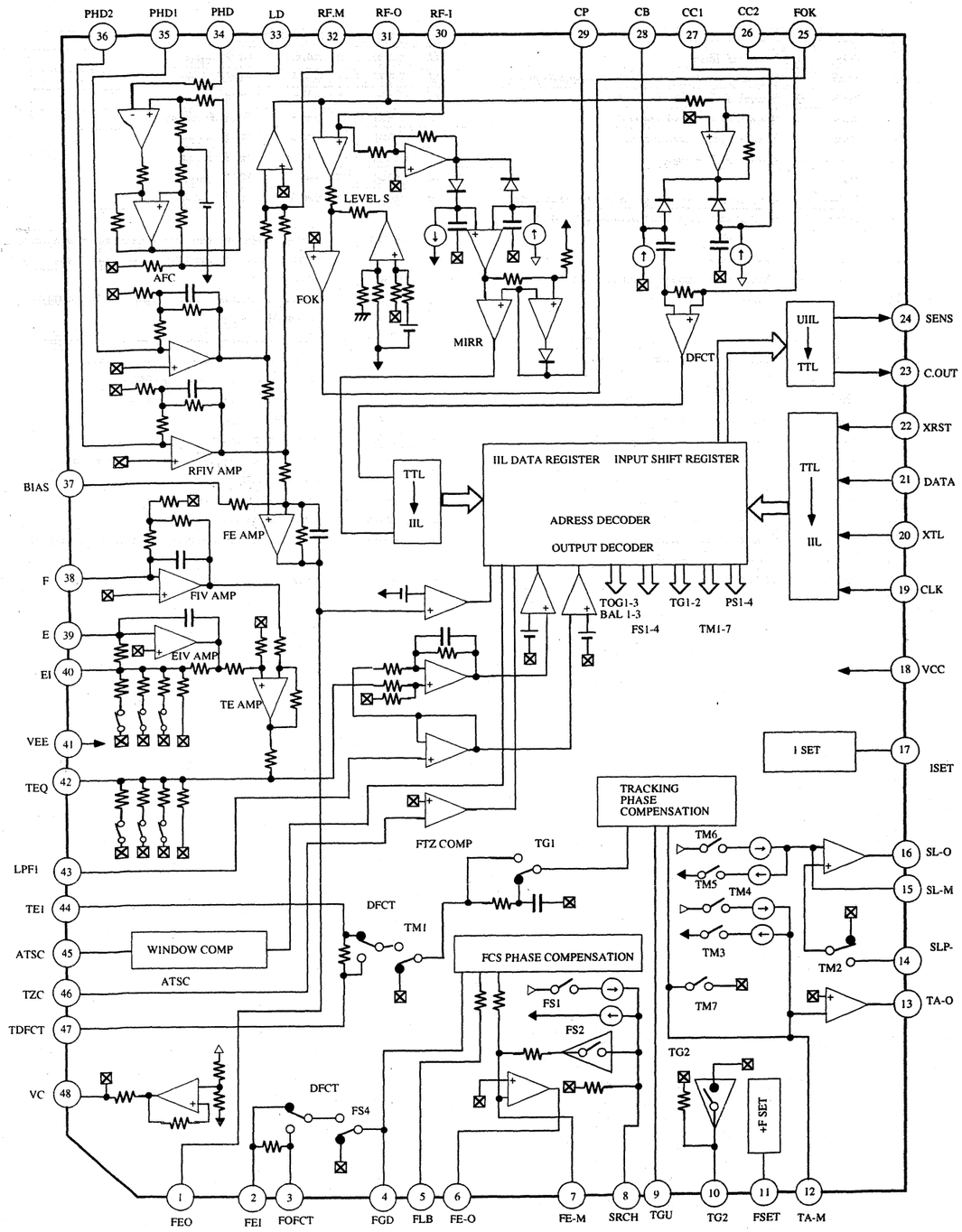

Pin No.	Symbol	I/O	Description
1	FEO	O	Output pin for focusing error amplifier
2	FEI	I	Input pin of focusing error
3	FDFCT	I	Capacitor connection pin for time constant when defect
4	FGD	I	Capacitor connection pin for high frequency gain Down of focusing servo
5	FLB	I	Time constant circuit connection pin for low frequency gain up of focusing servo
6	FE_O	O	Focusing drive output pin
7	FE_M	I	Inverted input pin of focusing amplifier
8	SRCH	I	Time constant circuit connection pin for focusing search waveform
9	TGU	I	Time constant circuit connection pin for tracking high frequency gain changeover
10	TG2	I	Time constant circuit connection pin for tracking high frequency gain changeover
11	FSET	I	Peak setting pin of phase compensation of focusing tracking
12	TA_M	I	Non-inverted input pin of tracking amplifier
13	TA_O	O	Inverted input pin of tracking amplifier
14	SL_P	I	Non-inverted input pin of sled amplifier
15	SL_M	I	Inverted input pin of sled amplifier
16	SL_O	O	Sled drive output pin
17	ISET	I	Input pin to decide focusing search, tracking jump, and height of sled kick.
18	VCC	-	Power supply pin (+5V)
19	CLK	I	Serial data transfer clock input pin form microprocessor
20	XLT	I	Latch input pin from microprocessor
21	DATA	I	Serial data input pin from microprocessor
22	XRST	I	Reset input pin
23	C.OUT	O	Signal output pin to count the track numbers.
24	SENS	O	FZC, DFCT,TZC etc. signal output pin from command of microprocessor
25	FOK	O	Comparator output pins of focus OK.
26	CC2	I	Defect bottom hold input pin
27	CC1	O	Defect bottom hold output pin
28	CB	I	Capacitor connection pin for defect bottom hold
29	CP	I	Mirror hold capacitor connection pin
30	RF_I	I	RF summing amplifier input pin
31	RF_O	O	RF summing amplifier output pin
32	RF_M	I	RF summing inverted amplifier output pin
33	LD	O	APC amplifier output pin
34	PHD	I	APC amplifier input pin
35	PHD1	I	Inverted input pin of RF I-V amplifier
36	PHD2	I	Inverted input pin of RF I-V amplifier
37	FE_BIAS	I	Bias adjustment pin of focusing error amplifier
38	F	I	Inverted input pin of I-V amplifier of F
39	E	I	Inverted input pin of I-V amplifier of E
40	EI	-	Gain adjustment of I-V amplifier E
41	VEE	-	Ground
42	TEO	O	Tracking error amplifier output pin
43	LPFI	I	Comparator input pin for balance adjustment
44	TEI	I	Tracking error input pin
45	ATSC	I	Window comparator input pin for ATSC detector
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for time constant when defect
48	VC	O	DC voltage output pin of (VCC+VEE)/2

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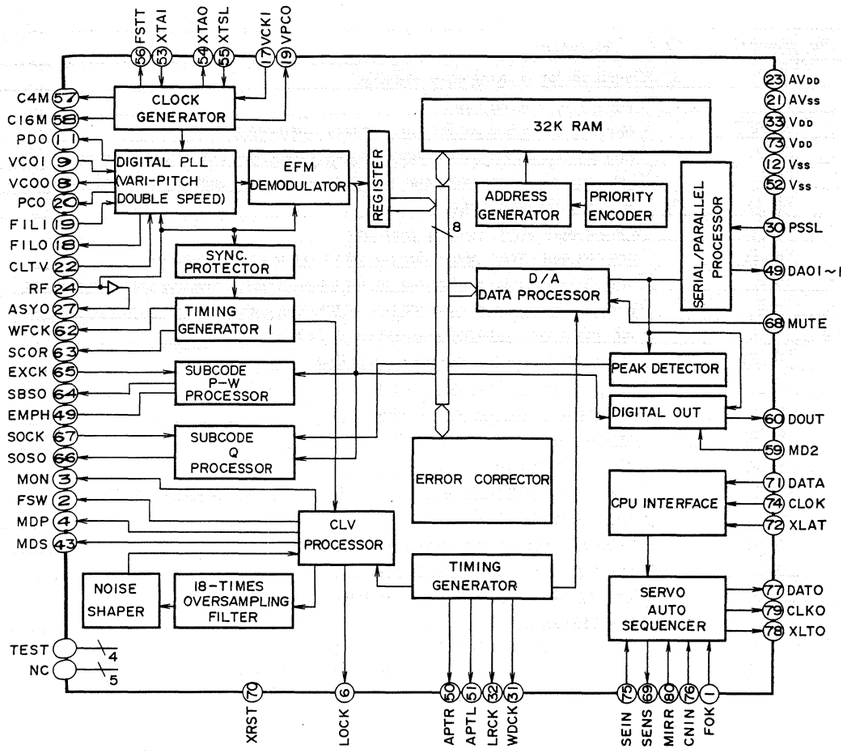

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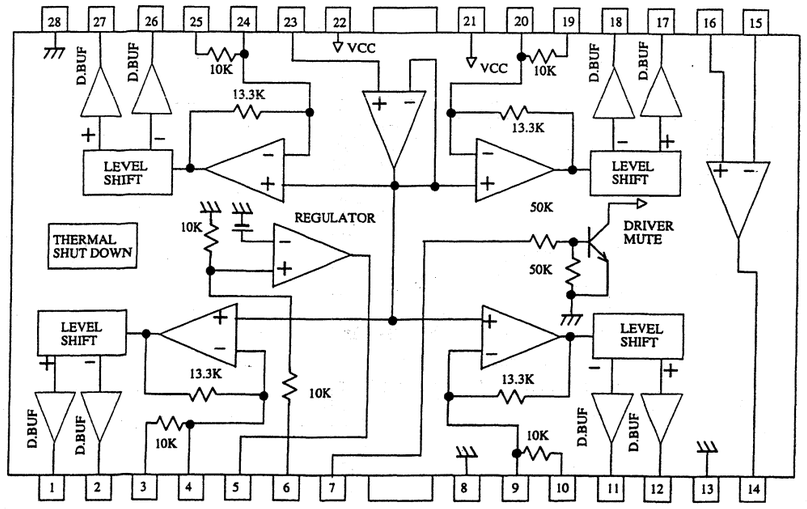
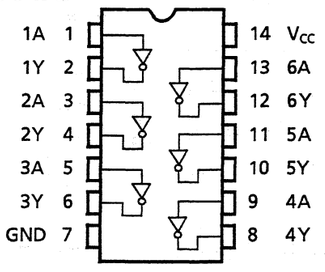
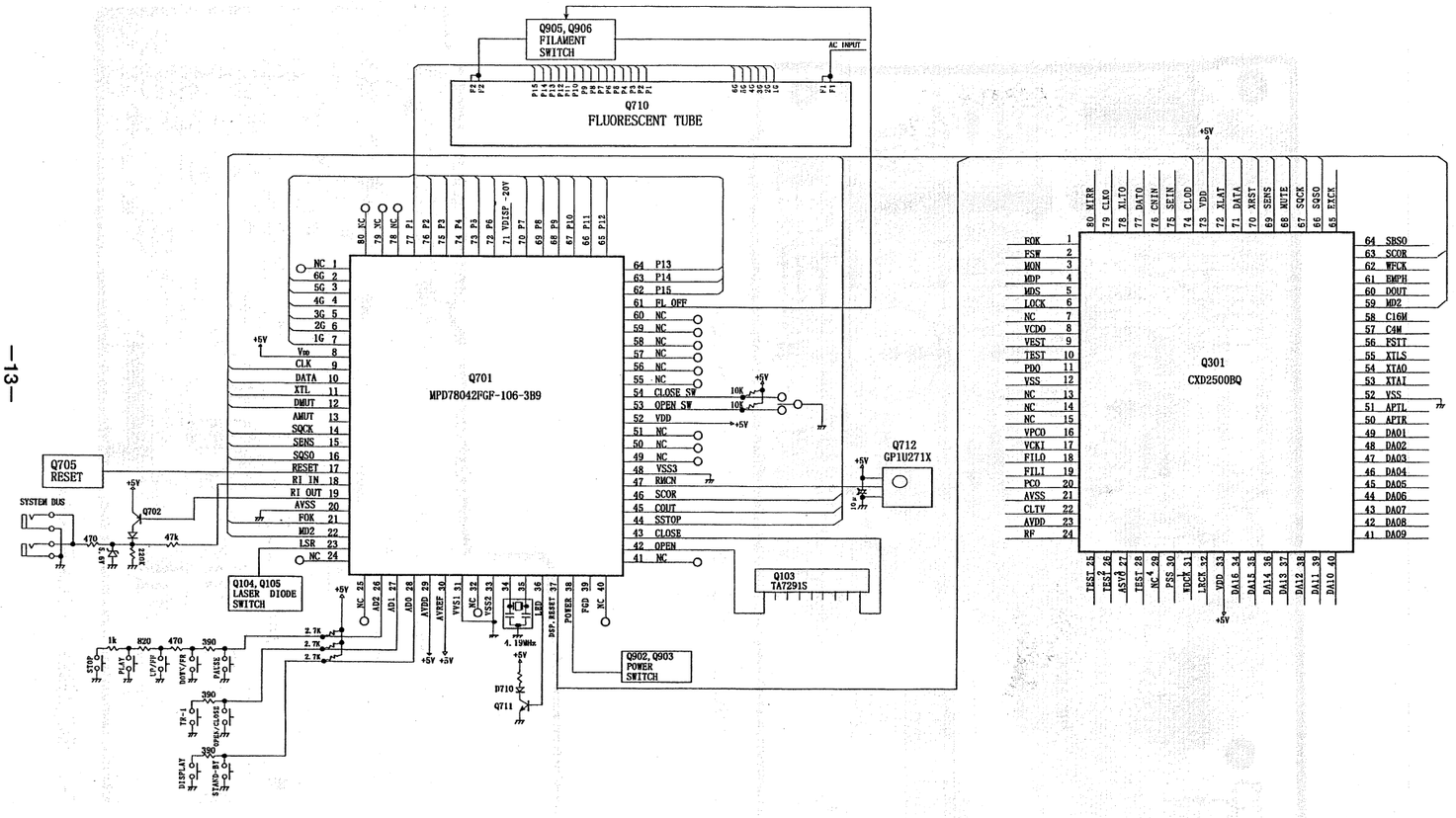


NO.	SYMBOL	I/O	DESCRIPTION	NO.	SYMBOL	I/O	DESCRIPTION
1	FOK	I	Focus OK input	42	DA08	O	DA08 GFS output
2	FSW	O	Output filter changeover output of spindle motor	43	DA07	O	DA07 RFCK output
3	MON	O	Spindle motor control output	44	DA06	O	DA06 C2P0 output
4	MDP	O	Spindle motor servo control	45	DA05	O	DA05 XRAOF output
5	MDS	O	Spindle motor servo control	46	DA04	O	DA04 MNT3 output
6	LOCK	O	H when GFS is high	47	DA03	O	DA03 MNT2 output
7	NC			48	DA02	O	DA02 MNT1 output
8	VCOO	O	Oscillation circuit output for analog FEM PLL	49	DA01	O	DA01 MNT0 output
9	VCOI	I	Oscillation circuit input for analog EFM PLL (8.6436MHz)	50	APTR	O	Control output for aperture correction. H when Rch.
10	TEST	I	Test terminal	51	APTL	O	Control output for aperture correction. H when Lch.
11	PDO	O	Charge pump output for analog EFM PLL	52	Vss		Ground
12	Vss		Ground terminal	53	XTAI	I	Crystal oscillation circuit input of 16.9344MHz or 33.8688MHz input
13-15	NC						
16	VPCO	O	PLL charge pump output for variable pitch	54	XTAO	O	Crystal oscillation circuit output of 16.9344MHz
17	VCKI	I	Clock input for variable pitch from VCO (16.934MHz)	55	XTSL	I	Crystal selection input terminal. L when 16.9344MHz. H when 33.8688MHz.
18	FILO	O	Filter output for master PLL	56	FSTT	O	2/3 divided output of pins 53 & 54
19	FILI	I	Filter input for master PLL	57	C4M	O	4.2336MHz output
20	PCO	O	Charge pump output for master PLL	58	C16M	O	16.9344MHz output
21	AVss		Analog ground	59	MD2	I	Digital output control input. On at H & Off at L.
22	CLTV	I	VCO control voltage input for master	60	DOUT	O	Digital output
23	AVDD		Analog section power supply (+5V)	61	EMPH	O	Emphasis control output. Active H.
24	RF	I	EFM signal input	62	WFCK	O	Write frame clock output
25	TEST2	I	Connect to the ground.	63	SCOR	O	Sub-code detection output. H when is detected S0 or S1.
26	TEST3	I	Connect to the ground.				
27	ASYO	O	EFM full swing output	64	SBSO	O	Serial output of sub code (P~W)
28	TEST4	I	Connect to the ground.	65	EXCK	I	Clock input for read out SBSO
29	NC			66	SQSO	O	Sub Q 80 bits, PCM peak, and level data 16 bits output
30	PSSL	I	Audio data output mode changeover input. Serial data at L and paraller data at H.	67	SQCK	I	Clock input for read out SQSO
31	WDCK	O	D/A interface for 48 bits slot. Word clock f=2Fs.	68	MUTE	O	Muting control output. Active H.
32	LRCK	O	D/A interface for 48 bits slot. LR clock f=Fs.	69	SENS	-	Sens output. Output to microprocessor
33	VDD		Power supply terminal (+5V)	70	XRST	I	System reset. Rest at low level.
34-49			Data output terminals	70	DATA	I	Serial data input from microprocessor
			PSSL=1 PSSL=0	72	XLTA	I	Latch input from microprocessor. Latch the serial data at trailing.
34	DA16	O	DA16 Serial data of 48 bits slot	73	VDD		Power supply
35	DA15	O	DA15 Bit clock of 48 bits slot	74	CLOK	I	Serial data transfer clock input from microprocessor
36	DA14	O	DA14 Serial data of 64 bits slot	75	SEIN	I	Sens input from SSP
37	DA13	O	DA13 Bit clock of 68 bits slot	76	CNCI	I	Track jump numbers count signal input
38	DA12	O	DA12 LR clock of 68 bits slot	77	DATO	O	Serial data output to SSP
39	DA11	O	DA11 GTOP output	78	XLTO	O	Serial data latch output to SSP. Latch at trailing.
40	DA10	O	DA10 XUGF output	79	CLKO	O	Serial data transfer clock output to SSP
41	DA09	O	DA09 XPLCK output	80	MIRR	I	Mirror signal input

TC74HCU04AF



MICROPROCESSOR CONNECTION DIAGRAM

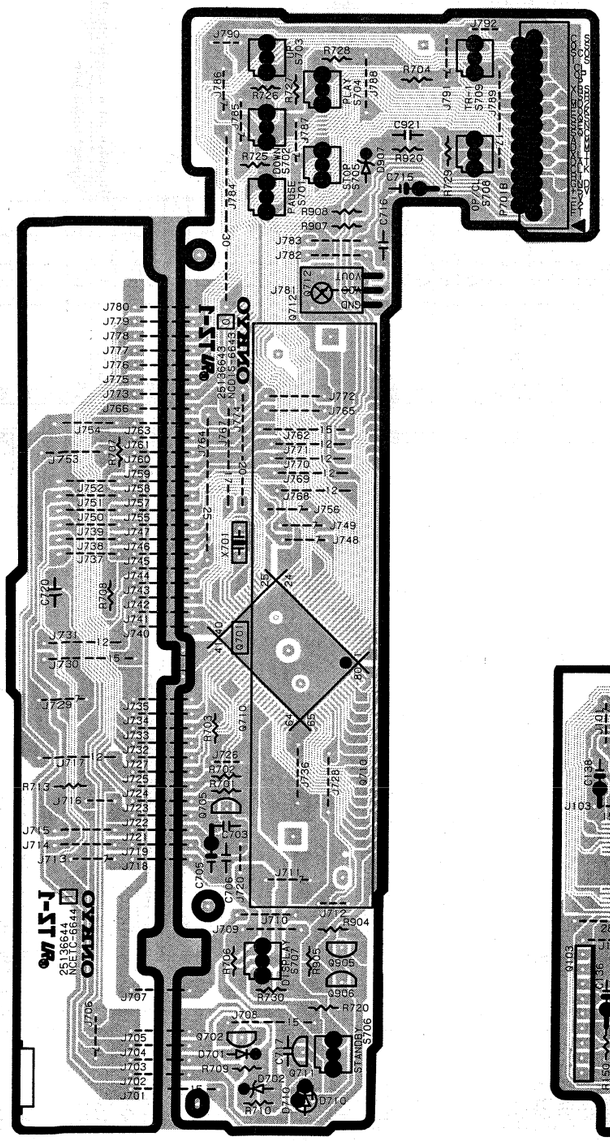


MICROPROCESSOR TERMINAL DESCRIPTION

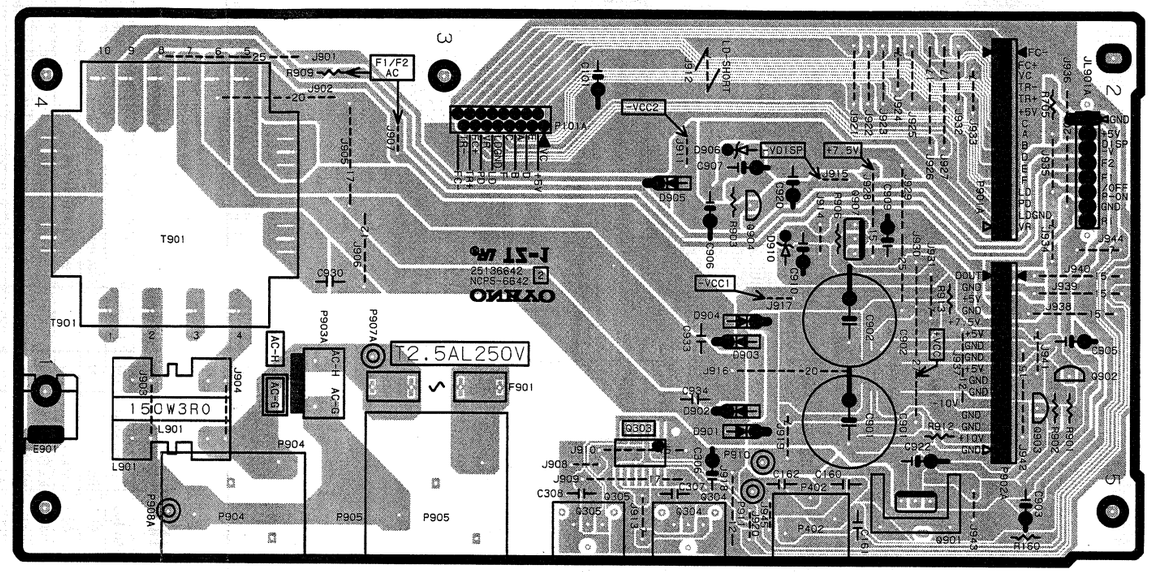
Pin No.	Function	I/O	Logic	Description
1	NC	O		Not used.
2	6G	O	H	Grid output pins of FL tube
3	5G	O	H	
4	4G	O	H	
5	3G	O	H	
6	2G	O	H	
7	1G	O	H	
8	VDD1	I		Power source pin (+5V)
9	CLK	O	CLK	Command transfer clock output pin to signal processing IC
10	DATA	O	H	Command transfer data output pin to signal processing IC
11	XLT	O	L	Command transfer latch output pin to signal processing IC
12	DMUT	O	H	Digital muting control output pin to signal processing IC
13	AMUT	O	H	Muting output pin to analog circuit
14	SQCK	O	CLK	Subcode reading clock output pin to signal processing IC
15	SENS	I	H/L	Sense signal input pin from signal processing IC
16	SQSO	I	H	Subcode data input pin form signal proceeding IC
17	RESET	I	L	Reset signal input pin
18	RI.IN	I	H	System signal input pin
19	RI.OUT	O	L	System signal output pin
20	AVSS	I		Power supply for A/D converter (Ground)
21	FOK	I	H	Focus OK signal input pin
22	MD2	O	H	Enable signal output pin of optical output to signal processing IC
23	LSR	O	H	Laser control output pin.
24	NC	O		Not used
25	NC	O		
26	AD2	I		Operation key connection pin 3
27	AD1	I		Operation key connection pin 2
28	AD0	I		Operation key connection pin 1
29	AVDD	I		Power supply for A/D converter (+5V)
30	AVREF	I		Reference power supply for A/D converter (+5V)
31	VSS1	I		Ground pin
32	NC	O		Not used
33	VSS2	I		Ground pin
34	X1	I	CLK	System clock oscillation circuit input pin
35	X2	O	CLK	System clock oscillation circuit output pin
36	LED	O	H	STAND-BY LED control pin
37	DSP.RESET	O	L	Reset output pin to signal processing IC
38	POWER	O	H	Power source control output pin
39	FGD	O	H	Focus gain down control output pin.
40	NC	O		Not used.

Pin No.	Function	I/O	Logic	Description
41	NC	O		Not used.
42	OPEN	O	L	Tray control output pin
43	CLOSE	O	L	Tray control output pin
44	SSTOP	I	L	Pickup innermost position detection switch input pin
45	COUT	I	H	Bit track count input pin
46	SCOR	I	H	Subcode frame detection signal input pin from signal processing IC
47	RMCN	I	L	Remote control signal input pin
48	VSS3	I		Ground pin
49	NC	O		Not used,
50	NC	O		
51	NC	O		
52	VDD	I		Power supply pin (+5V)
53	OPEN.SW	I	L	Tray open switch input pin
54	CLOSE.SW	I	L	Tray close switch input pin
55	NC	O		Not used.
56	NC	O		
57	NC	O		
58	NC	O		
59	NC	O		
60	NC	O		
61	FL.OFF	O	H	Control output pin of FL tube
62	P15	O	H	Segment output pins
63	P14	O	H	
64	P13	O	H	
65	P12	O	H	
66	P11	O	H	
67	P10	O	H	
68	P9	O	H	
69	P8	O	H	
70	P7	O	H	
71	-VDISP	I		Negative power supply pin of FL tube
72	P6	O	H	Segment output pins
73	P5	O	H	
73	P3	O	H	
74	P4	O	H	
75	P3	O	H	
77	P1	O	H	
78	NC	O		Not used.
79	NC	O		
80	NC	O		

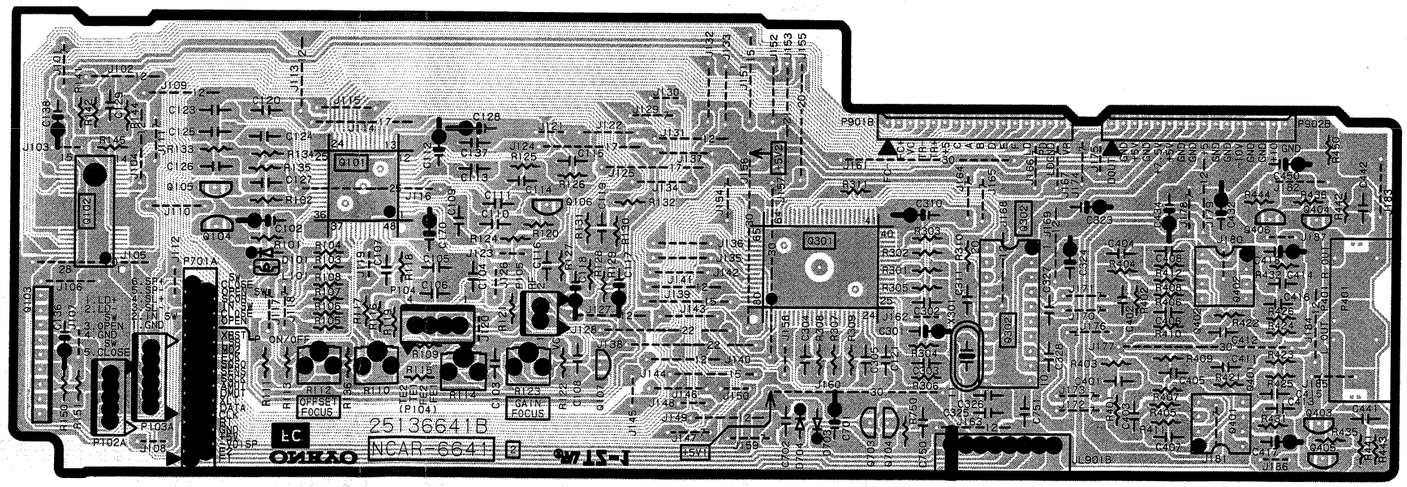
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



DISPLAY CIRCUIT PC BORAD (NADIS-6643)

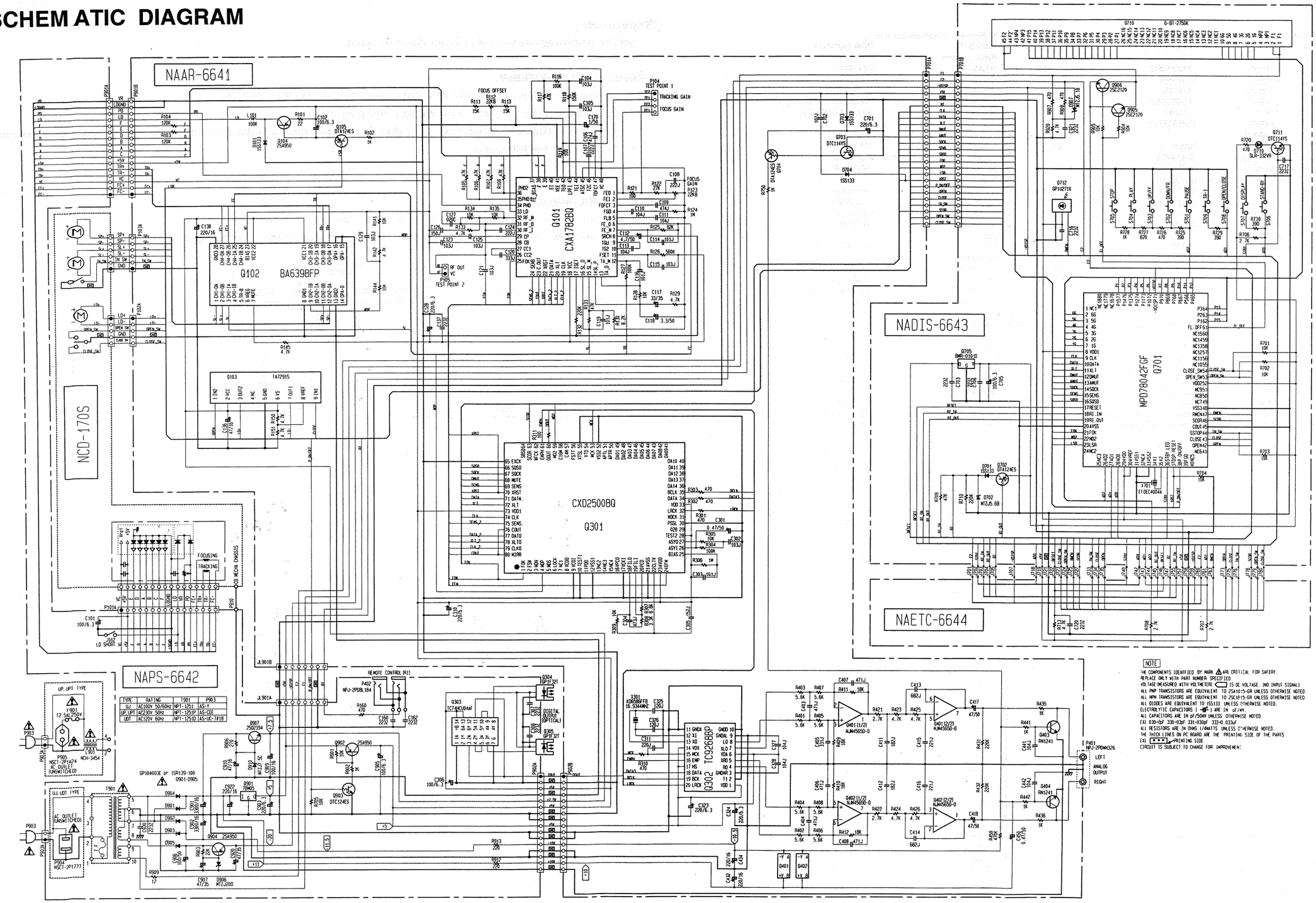


POWER SUPPLY CIRCUIT PC BORAD (NAPS-6642)



MAIN CIRCUIT PC BOARD (NAAR-6641)

SCHEMATIC DIAGRAM



NOTE

THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFERY.
REPLACE ONLY WITH PART NUMBER SPECIFIED
VOLTAGE MEASURED WITH VOLTMETER ⟨⟩ 15 DC VOLTAGE (NO INPUT SIGNAL)
ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
ELECTROLYTIC CAPACITORS (—|(—) ARE IN uF/WV.
ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.
EXI 030-0pF 330-33pF 331-330pF 333-0.033uF
ALL RESISTORS ARE IN OHMS 1/4WATTS UNLESS OTHERWISE NOTED.
THE THICK LINES ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS
EXI [▪▪▪] PRINTING SIDE
CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

PRINTED CIRCUIT BOARD-PARTS LIST

MAIN CIRCUIT PC BOARD (NAAR-6641-1A/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q101	2224109 3	CXA1782BQ
Q102	2224106 6	BA6398FP
Q103	2224023 9	TA7291S
Q301	2224048 7A	CXD2500BQ
Q302	2224079 2	TC9268P
Q401,Q402	2224019 1	NJM4565D-D
	Transistors	
Q104	2211504	2SA950-Y
Q105,Q704	2212600 or	DTA124ES or
	2213580 or	RN2203 or
	2215780	NSP KRA103M
Q403,Q404	2213631 or	RN1241-A or
	2213632	RN1241-B
Q703	2212810 or	DTC114YS or
	2213570	RN1207
	Diodes	
D101,D703,D704	223163 or	1SS133 or
	223222	WG713A
	Oscillator	
X301	3010308	HC-49/U0316.9344M
	Coil	
L101	233454 K100	NCH-1452 100K
	Capacitors	
C102,C128,C310	3547210 19	100 μ F,6.3V,Elect.
C104,C105,C115	3747210 34	0.01 μ F±5%,50V,Plastic.
C106,C109	3747247 44	0.47 μ F±5%,50V,Plastic.
C107, C108,C124	3747222 24	2200pF±5%,50V,Plastic.
C110,C111,C113	3747210 44	0.1 μ F±5%,50V,Plastic.
C112	3547804 79	4.7 μ F,50V,Elect.
C117	3547633 09	33 μ F,35V,Elect.
C118	3547803 39	3.3 μ F,50V,Elect.
C120	3747233 34	0.033 μ F±5%,50V,Plastic.
C121,C123,C125	3747210 34	0.01 μ F±5%,50V,Plastic.
C129,C302	3747210 34	0.01 μ F±5%,50V,Plastic.
C136	3547447 09	47 μ F,16V,Elect.
C138,C432,C434	3547422 19	220 μ F,16V,Elect.
C170	3547801 09	1 μ F,50V,Elect.
C301,C450	3547847 99	0.47 μ F,50V,Elect.
C304	3747247 34	0.047 μ F±5%,50V,Plastic.
C305	3747215 24	1500pF±5%,50V,Plastic.
C323,C324	3547222 19	220 μ F,6.3V,Elect.
C327,C328	3747210 34	0.01 μ F±5%,50V,Plastic.
C411,C412	3747218 24	1800pF±5%,50V,Plastic.
C413,C414	3747268 24	6800pF±5%,50V,Plastic.
C417,C418	3933847 07	47 μ F,50V,Elect.
C441,C442	3747210 44	0.1 μ F±5%,50V,Plastic.
C701	3547247 19	470 μ F,6.3V,Elect.
C702	3747210 24	1000pF±5%,50V,Plastic.
	Resistors	
R112,R123	5210242	N06HR22KBE, Trimming
	Terminal	
P401	2504551 2	NPJ-2PDWH326,Teminal
	Sockets	
JL901B	25050272	NSCT-8P100
P701A	25051832 or	NSCT-25P1619 or
	25050701 or	NSCT-25P505 or
	25050857	NSCT-25P652
P901B,P902B	25051527	NSCT-16P1314
	Plugs	
P102A	25055149	NPLG-5P133
P103A	25055150	NPLG-6P134
P104	25055045	NPLG-4P33
P105	25055038	NPLG-2P29

POWER SUPPLY PC BOARD (NAPS-6642-1A/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Photo couplers	
Q304,Q305	24120038	GP1F32T
	ICs	
Q303	22240875	TC74HCU04AF
Q901	2227800 55JRC or	78M05(NJM78M05FA) or
	2227800 55MAT	78M05(AN78M05F)
	Transistors	
Q902 ,Q904	2211504	2SA950-Y
Q903	2213160 or	DTC124ES or
	2215810	NSP KRC103M
Q907	2202706	2SD2394-F
	Diodes	
D901-D905	22380035 or	GP104003E or
	22380032	1SR139-100
D906	224472004	MTZJ20D
D910	224470753	MTZJ7.5C
	Coil	
100	231222	NCH-3454 <P,PT>
	Capacitors	
C101,C306	354721019	100 μ F,6.3V,Elect.
C901,C902	393343327S	3300 μ F,16V,Elect.
C903	393322217	220 μ F,6.3V,Elect.
C905,C909	354721019	100 μ F,6.3V,Elect.
C906	354781019	100 μ F,50V,Elect.
C907,C910,C920	354744709	47 μ F,16V,Elect.
C922	354742219	220 μ F,16V,Elect.
	Terminal	
P402	25045330	NPJ-2PDBL184
	Fuse holders	
F901A	25050065	⚠ YSH403T <P,PT>
	Sockets	
JL901A	25051112	NSCT-8P899
P101A	25051974	NSCT-16P1761
P904	25051990	⚠ NSCT-2P1777 <DT>
P905	25051637	⚠ NSCT-2P1424 <P,PT>
	Plugs	
P901A,P902A	25055805	NPLG-16P761
P903A	25055675	NPLG-2P631
	Radiator	
Q901A	27160145-1	RAD-51

DISPLAY CIRCUIT PC BOARD (NADIS-6643-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q701	22241373	MPD78042FGF-106-3B9
Q705	22241210	BMR-0101D
	FL tube	
Q710	212165	6-BT-275GK
	Remote sensor	
Q712	241307	GP1U271X
	Transistors	
Q702	2212600 or	DTA124ES or
	2213580 or	RN2203 or
	2215780	NSP KRA103M
Q711	221281	DTC114YS
Q905,Q906	2211164	2SC2120-Y
	Diodes	
D701	223163 or	1SS133 or
	223222	WG713A
D702	224470562	MTZJ5.6B
D710	225338	SLR-332VR
D907	224470512	MTZJ5.1B
	Oscillator	
X701	3010229	CE-LOCK EFOEC004A4
	Capacitor	
C705	353721019	100 μ F,6.3V,Elect.
	Socket	
P701B	25051869 or	NSCT-25P1656 or
	25050722 or	NSCT-25P526 or
	25050889	NSCT-25P684
	Switches	
S701-S709	25035652	NPS-111-S604
	Holder	
Q710A	27190941	(FL)

NOTE : THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

NOTE : <DT>:120V model only
<P,PT>:230V model only

NSP : No spare parts

ADJUSTMENT PROCEDURES

Preparation

Set the trimming resistors R112 and R123 to center.

A.Focus offset adjustment

1. Connect the oscilloscope to pin1(RF) of the socket P105 and GND to pin2(VR)
2. Load the test disc YEDS-18 on the tray and play the track 2.
3. Adjust the trimming resistor R112 so that the waveform(eye pattern) on the oscilloscope becomes maximum.
4. Remove the oscilloscope.

B.Focus gain adjustment

1. Set the output of the audio oscillator to 1kHz and 1～1.5Vp-p.
2. Connect the oscilloscope and audio oscillator as shown below. (Refer Fig-1)

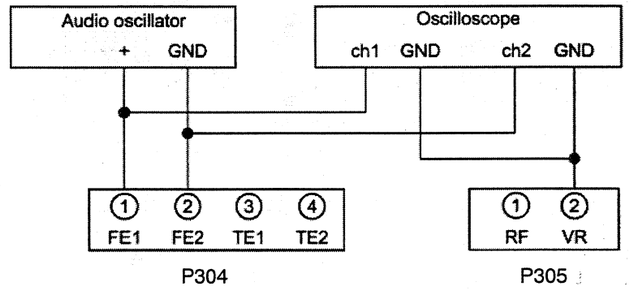


Fig-1

3. Load the test disc YEDS-18 on the tray and play the track 2.
4. Adjust the trimming resistor R123 so the signal of channel 2 on the oscilloscope becomes 1.25 times of channel 1. (Refer Fig-2)
5. Remove the oscilloscope and audio oscillator.

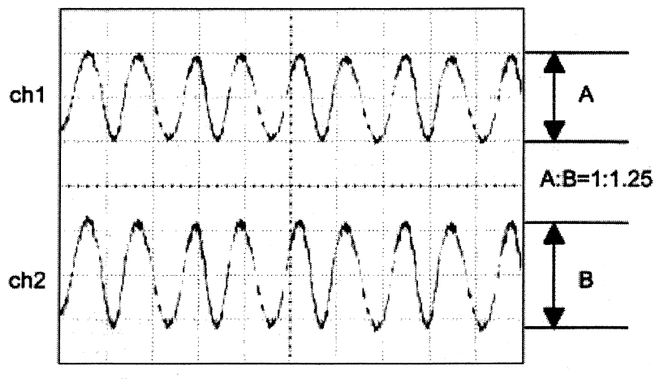
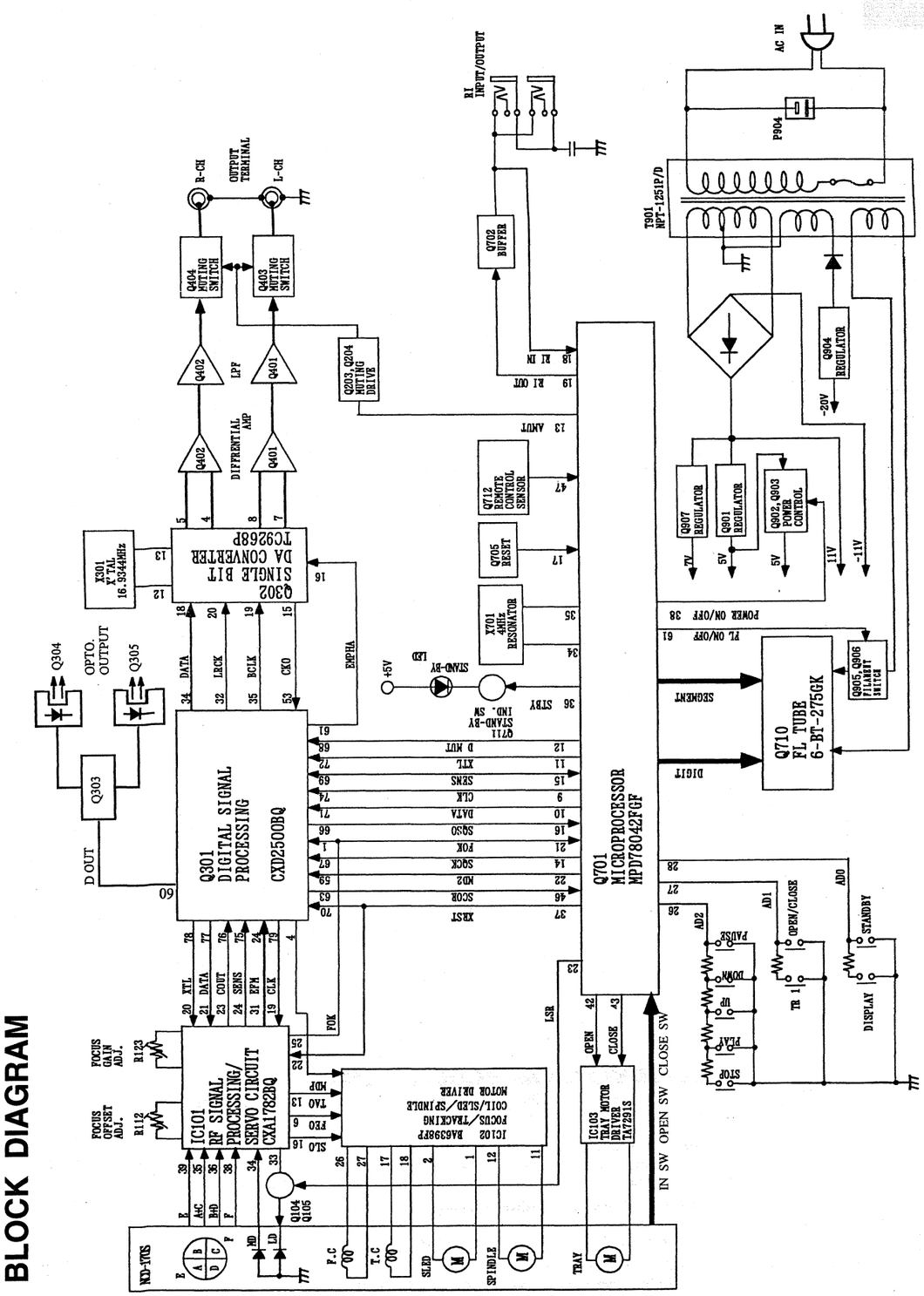


Fig-2

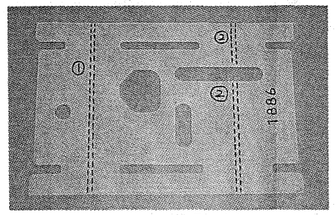
BLOCK DIAGRAM



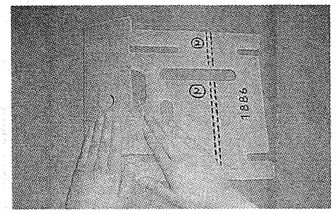
PACKING PROCEDURES

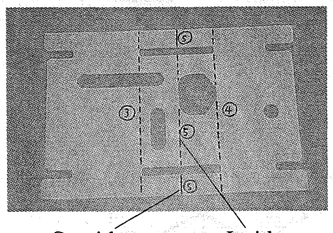
1. Assembling of Pad A

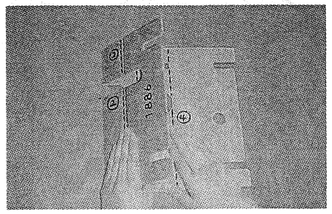
Procedures : ① to ⑤



- - - - - - - - - : Inside
---------- : Outside



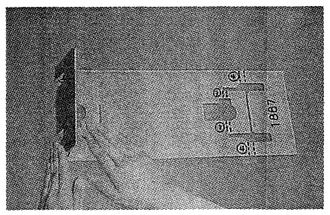


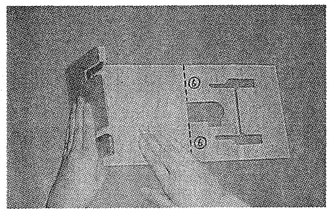


2. Assembling of Pad B

Procedures : ① to ④

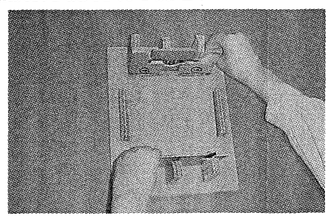
- - - - - - - - - : Inside

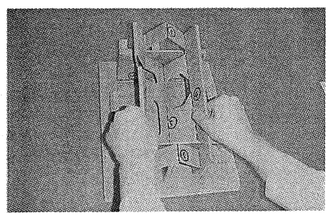




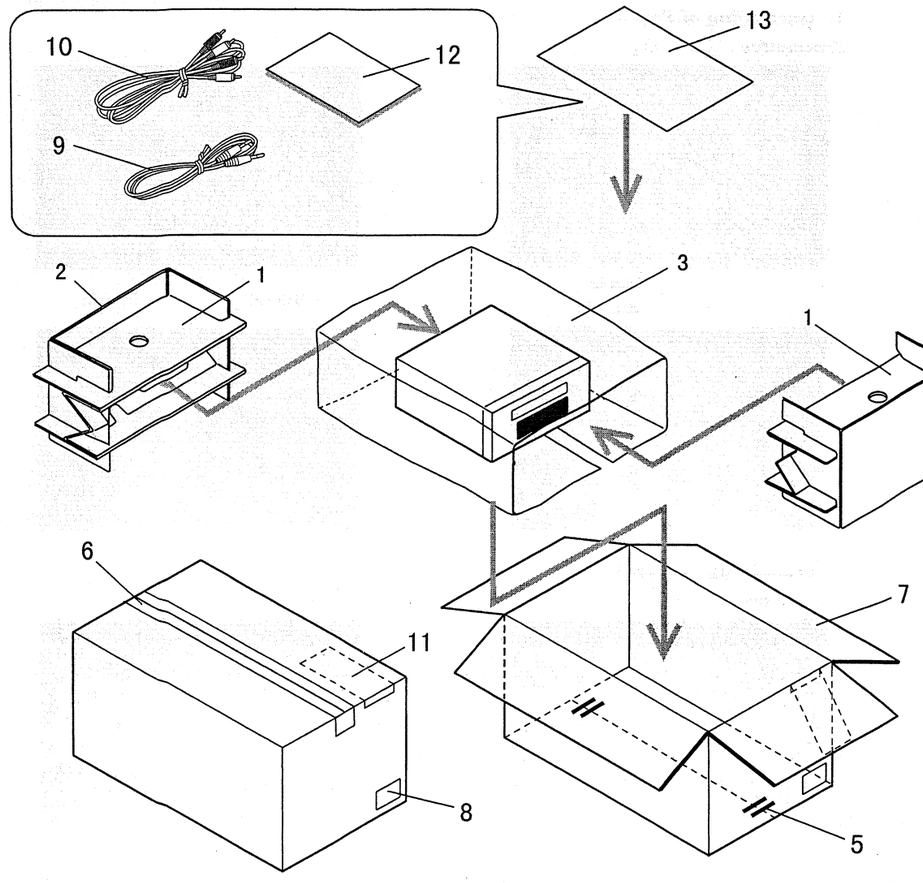
3. Insertion

Insert Pad A to Pad B.





PACKING VIEW



PACKING PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	29091886	Pad A
2	29091887	Pad B
3	29095835	Protection sheet
4	261504	Paper tape
5	282301	Staple
6	29110071	PP Tape
7	29053456	Carton box
8	29362472	Label EAN
9	2010375	Cord RI
10	2010376	Audio cord
12	29342739	Instruction manual E
12	29342740	Instruction manual U3 FSI <P>
12	29342741	Instruction manual U3 GDSW <P>
12	29342742	Instruction manual T <DT,PT>
13	29100180	Accessory bag

NOTE : <DT> : Taiwanese model only
<P> : European model only
<PT> : Asian model only

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